Drawing on Innovation
CENTRAL WIRE INDUSTRIES

2014 Corrective Measures Implementation Field Investigation Plan

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Prepared for:

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1.0 INTRODUCTION

The Central Wire Union Plant (formerly known as Techalloy) is located in Union, Illinois. It is operating under an Order on Consent with the U.S. Environmental Protection Agency (Docket No. R8H-5-99-0008) to operate a groundwater extraction and treatment facility to remove a chlorinated solvent plume from the groundwater downgradient from the Central Wire facility.

In analyzing the groundwater from the original downgradient well nest (DGW-1, see Figure 1, "Wells Associated with the Corrective Measure Implementation Plan" at Central Wire's Union Plant) it has become apparent that some of the plume had migrated beyond the capture zone before the treatment facility was put into operation in the early 1990s.

As a result, since 2007 Central Wire has been sampling, on a semiannual basis, the downgradient residential wells and the well believed to be the closest downgradient well to the leading edge of the chlorinated plume - the **Ex. 6 Personal Privacy (PP)** well on the north side of their property (see Figure 1). These wells have been sampled to confirm that they have not been impacted by the chlorinated plume. To date (through June 2014), there have been no detections of chlorinated solvents in any of the residential wells or in the **Ex. 6 Personal Privacy (PP)** well. The monitoring well nest of three wells at DGW-2 well nest being used as the sentinel wells. DGW-2 wells have been sampled semiannually since June 2011 and no VOCs have been detected.

Central Wire has also been attempting to identify the leading edge of the plume in order to insure that the residential wells downgradient of the plume are protected. The leading edge is on the **Ex. 6 Personal Privacy (PP)** property about 800 feet from the Ex. 6 Personal Privacy (PP) well and about 1,000 feet from the nearest residential well.

While ground water transport modeling conducted in 2007 and 2008 predicted that the chlorinated solvents in the plume would degrade before reaching residential wells and while we found no chlorinated compounds at what we estimated was the leading edge of the plume in 2012 at GP-18 (see Figure 1), Central Wire wants to make sure it takes all reasonable actions to protect the residential drinking water supply for the residences along I Ex. 6 Personal Privacy (PP) mmediately downgradient from the chlorinated plume. Since no chlorinated plume observations were made at these locations above the MCLs in 2012, Central Wire will be sampling the same locations in 2014. Table 1 also identifies the proposed 2014 sampling locations. A figure depicting the leading edge of the plume will be prepared after the 2014 sampling event.

At the 2007 and 2008 calculated rates of plume movement of about 125 to 130 feet per year and assuming GP-18 is at the leading edge of the plume, it would take six years (830[1] ft/130 ft/yr = 6.4 yrs) until reaching the **Ex. 6 Personal Privacy (PP)** well. It will take up to 8 years before reaching the well at the home on the south side of Route 176

[1] All measurements taken from Google Earth

in front of the Ex. 6 Personal Privacy (PP) (approx. 1,050 ft.) Ex. 6 Personal Privacy (PP) Lastly, it would take 10 years before it reached the closest occupied residential well on the north side of Ex. 6 Personal Privacy (PP) (1330 ft/130 ft = 10.23).

2.0 2014 CORRECTIVE MEASURES IMPLEMENTATION FIELD INVESTIGATION PLAN

The goal of the 2014 Corrective Measures Implementation Field Investigation is to identify the leading edge of the chlorinated plume.

The objectives of the 2014 field investigation are to:

- Assure Central Wire, U.S.EPA, local residents and any additional stakeholders that the public is being protected, i.e., chlorinated compounds are not reaching the drinking water wells downgradient of the contaminated solvent plume.

- Learn more about the characteristics of the aquifer and the interaction of the plume with the environment by collecting additional data that is outlined below.

The 2014 CMI Field Investigation will include the following tasks:

- Perform groundwater sampling to locate the leading edge of the chlorinated solvent plume. This will be done using direct push technology to collect samples on the Ex. 6 Personal Privacy (PP) property as was done in prior years (see Figure 1) to locate the leading edge of the chlorinated plume. Central Wire has secured permission from Ex. 6 Personal Privacy (PP) the owner of the Ex. 6 Personal Privacy (PP), for the 2014 Field Investigation.

  Samples will be collected at three depths at each of eight Geoprobe locations – at 27 feet, 57 feet and 85 feet deep and analyzed for VOCs using EPA Method 8260B. These eight locations will be at historical and contaminated locations GP-3 and GP-8. This will provide information on historical movement and concentrations of chlorinated solvents in the plume. Sampling will continue at the locations that have represented the leading edge of the chlorinated plume in the last three sampling events: GP-16, GP-17, GP-18, -GP-19, GP-20 and GP-22joh

  All Geoprobe samples will be collected using standard low flow sample collection techniques in accordance with ASTM Standard ASTM D6771-02 "Standard Practice for Low-Flow Purging and Sampling for Wells and Devices Used for Ground-Water Quality Investigations" and EPA/540/S-95/504, "Low Flow (Minimal Drawdown) Ground-Water Sampling Procedures". Each sampling location will be monitored real time for pH Specific Conductance, Oxygen Reduction Potential (ORP) and Dissolved Oxygen on five minute intervals and samples will not be collected until

these values have stabilized. Stabilization is considered to be achieved when three consecutive samples have the following characteristics:

- pH at +/- 0.1 unit
- Specific Conductance at +/- 3%
- ORP is at +/- 10 millivolts
- Dissolved Oxygen is at +/- 10% for values > 0.5 mg/L and if three DO values are < 0.5 mg/L, consider the values as stabilized.[2]

While groundwater level measurements are usually required in this type of sampling, they are not possible to do using direct push technology. However, these deposits are permeable and there is likely to be fairly minimal drawdown in the test intervals

- Samples will be collected using a GeoProbe 6610 or 7730 track mounted direct push device with a Geoprobe mechanical bladder pump (approved by EPA's Environmental Technology Verification Program).

  Geoserve personnel will decontaminate Geoprobe tooling between each sampling location (i.e., between GP-18 and GP 21) using an alkaline solution like Alconox and water. The tooling will then be triple rinsed with distilled water. A rinse water sample will then be collected (once per day) on distilled deionized water that is passed over the Geoprobe tooling in accordance with ASTM D6001 "Standard Guide for Direct-Push Water Sampling for Geoenvironmental Investigations" to assure there is no cross contamination taking place. The concentric tubing used to bring the sample from the sampling location to the surface via the bladder pump will be replaced between each sample (i.e., between GP-18 at 27 feet and GP-18 at 57 feet) and therefore does not need decontamination.

- Field (equipment) blanks will be collected on a daily basis and will be analyzed like the environmental samples for VOCs by EPA Method 8260B.

- The Central Wire Union Plant will continue to sample the residential wells along **Ex. 6 Personal Privacy (PP)** well and the new sentinel wells, designated as DGW-2S, DGW-2I and DGW-2D on a semiannual basis for VOCs. This is usually done in the spring and fall and RCRA groundwater monitoring well samples are collected at the same time. The fall 2014 sampling will be done at the same time as this

[2] From: "Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells (EQASOP-GW-001), U.S. EPA Region 1, January,2010

Geoprobe investigation. All field parameters will be collected for the residential, the Geoprobe and RCRA groundwater monitoring well samples.

- Central Wire personnel will continue to try to correlate the Ex. 6 Personal Privacy (PP) Ex. 6 Personal Privacy (PP) well pumping to the water levels in this well cluster by monitoring and logging the hours pumped each week by the high capacity wells on the Central Sod property which are currently outfitted with hour meters. Water levels will be collected for a minimum of one additional year. Once a review of collected data is interpreted, Central Wire may petition to end this water level monitoring after this year. To date, after three years of monitoring aquifer levels in the sentinel well nest (DGW-2I) the water levels appear to be correlated to rainfall more than any other factor. These records will be provided to EPA along with the RCRA CMI Monthly Progress Report including the manual measurements. Water levels will be reported in USGS elevation format (i.e., feet above mean sea level).

- Daily rainfall totals will be collected on a monthly basis from the Marengo area to determine if water levels in monitoring well DGW-2I responds to precipitation. Based on 2010 to 2014 information, the water level in monitoring well DGW-2I appears to respond primarily to rainfall, not the Ex. 6 Personal Privacy (PP) wells; however sluggish sod sales impacted the amount of irrigation well usage at Ex. 6 Personal Privacy (PP) in 2010 – 2013. The property is now being leased to a local farmer.

- Collect additional rounds of residential well samples from the homes immediately downgradient of the plume and the RCRA monitoring well network in the spring and fall of each year.

- After analytical data is received and evaluated a 2014 plume figure will be prepared showing the current location of the plume.

All samples collected from fixed and temporary wells (not residential wells) will be sampled using low flow sample collection techniques following ASTM D6771 "Standard Practice for Low-Flow Purging and Sampling". Field parameters will be collected by use of YSI 556 or similar water quality measuring meter.

All samples will be analyzed for volatile organic compounds by EPA Method 8260B. Geoprobe equipment will be provided by Ex. 6 Personal Privacy (PP) Geoprobe samples will be collected by Autumnwood ESH Consultants. Residential and monitoring well samples will continue to be collected by Cabeno Environmental Field Services, LLC. All samples will be analyzed by Test America Laboratories.

If VOCs are found in these wells, Central Wire will discuss the next steps with EPA before taking any additional action.

FIGURES AND TABLES

ATTACHMENT 1

HISTORICAL GEOPROBE ANALYTICAL DATA